



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/728,892

12/08/2003

Jun-Won Kang

1568.1080

9667

49455 7590 07/25/2008

STEIN, MCEWEN & BUI, LLP  
1400 EYE STREET, NW  
SUITE 300  
WASHINGTON, DC 20005

EXAMINER

LAIOS, MARIA J

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

07/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/728,892	<b>Applicant(s)</b> KANG ET AL.	
	<b>Examiner</b> MARIA J. LAIOS	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-15 and 17-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11-15 and 17-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

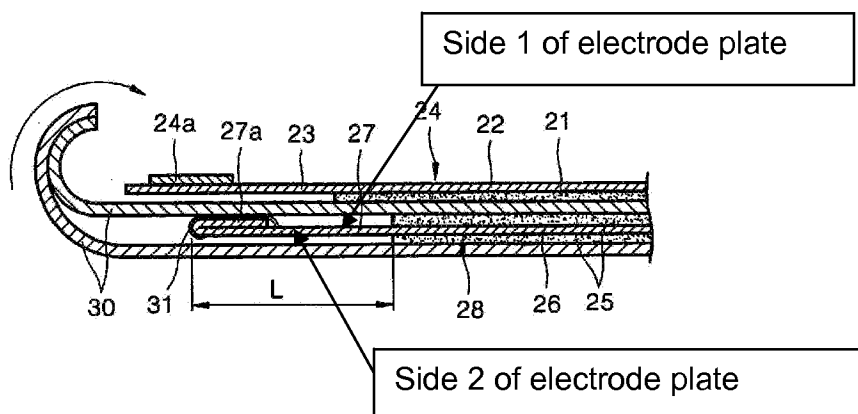
This office action is in response to the amendment filed 21 April 2008. Claims 1, 6, 9, 13 and 14 have been amended. Claims 25 and 26 have been added. Claims 2, 10 and 16 are cancelled. Currently claims 1, 3-9, 11-15, and 17-26 are pending.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 25 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims state that “the insulating tape contacts both sides of the at least one of the first electrode plate and the second electrode plate” which is not supported by the original specification or drawings.



***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-7, 9, 11-14 and 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibamoto et al. (WO 0278113, US 20040096733 is used as an English equivalent) in view of Iwasaki et al. (US 6,325,611).

With respect to claims 1, 3, 4, 9 and 11, Shibamoto et al. discloses an electrode unit comprising a first electrode plate (22a, anode current collector) having an uncoated portion on (31, a single sided exposed portion or 36- double sided exposed portion) with an electrode active material (22b); a second electrode plate (21a, cathode current collector) having an uncoated portion (30-single sided exposed portion, 37-double sided exposed portion) with an active material (21b); a separator (23) interposed between the anode and cathode; wherein a folded portion is provided on one edge so as to have the uncoated portion of the electrode plate faces itself (as applied to claims 3 and 11, see figure 28 below) and the folded portion is formed to be the same width as the electrode plate (paragraph 12, see figure 28 below which is the innermost circumferential portion of a spirally wound electrode thus the folded portion is at the winding start of the electrode plate, as applied to claim 4). Shibamoto et al. fails to disclose an insulating tape attached to the folded portion to cover the folded portion. Iwasaki teaches an

Art Unit: 1795

insulating tape affixed to the electrode (16, figure 3) to prevent a short circuit from occurring (col. 13 lines 63-67, col. 14 lines 1-3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the insulating tape of Iwasaki to cover the folded portion of Shibamoto et al. in order to prevent a short circuit.

Shibamoto further discloses a case accommodating the electrode unit to be sealed and having a terminal portion electrically connected to the electrode unit (11, battery can, Figure 1, as applied to claim 9)

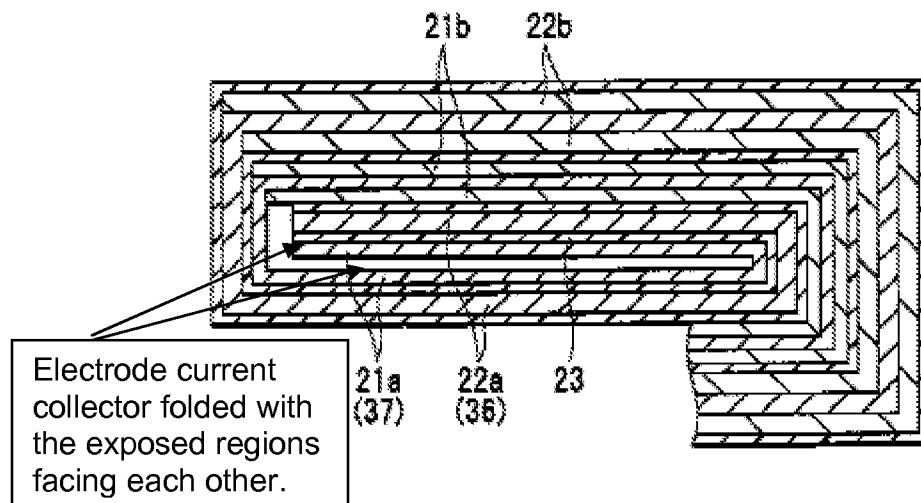


FIG. 28

With respect to claims 5 and 12, Shibamoto further discloses the current collector (21a) is folded in upon itself such that any burrs that occurred from the manufacturing process will come in contact with the same material (Figure 28).

With respect to claims 17 and 18, Shibamoto discloses the anode current collector comprising a metal foil (Paragraph 58).

With respect to claims 19 and 20, Shibamoto discloses the anode active material as carbon (Paragraph 61).

With respect to claims 6, 7, 13 and 14, Iwasaki discloses the negative lead (15) is positioned to overlie the positive current collector (1a) with a separator (3) in between them and the addition of the insulating tape (16) on the electrode (as seen in Figure 3) in order to prevent a short circuit from occurring (col. 13 lines 63-67, col. 14 lines 1-3). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the insulating tape of Iwasaki to the folded portion of Shibamoto et al. in order to prevent a short circuit.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to dispose the first electrode tab on the folded uncoated portion of the first electrode plate because the uncoated portion provides for a large surface area free from active material to which to weld the first electrode tab.

With respect to claims 21-24, Shibamoto discloses the folded portion is provided on the cathode where the uncoated portions are formed on both sides (37, double sided exposed portion) of the electrode plate and the exposed portions face each other (as seen in Figure 28 above).

Art Unit: 1795

5. Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibamoto et al. (WO 0278113, US 20040096733 is used as an English equivalent) and Iwasaki et al. (US 6,325,611) as applied to claims 1 and 9 above, and further in view of Fukumura et al. (US 6,027,835).

With respect to claims 8 and 15, Shibamoto modified by Iwasaki disclose the electrode unit as discussed above and incorporated herein but fails to disclose the electrode having an uncoated portion of 5 to 15 mm. Fukumura discloses an electrode sheet having a current collector coated with an active material with an exposed region of 0.3 mm to 30mm in order to be manufactured at high productivity (col. 2 lines 16-20) and can be easily wound (col. 5 lines 21-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have an exposed region of a current collector from 0.3 mm to 30 mm at the winding lead of the current collector as taught by Fukumura in the electrode as taught by Shibamoto modified by Iwasaki because this would allow for the product to be manufactured at a high productivity and would allow for the electrode to be easily wound. Shibamoto as modified by Iwasaki and Fukumura does not teach the claimed range of 5 to 15 mm. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

6. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibamoto et al. (WO 0278113, US 20040096733 is used as an English equivalent) and Iwasaki et al. (US 6,325,611) as applied to claims 1 and 9 above, and further in view of Kimijima et al. (US 2002/0004171).

Shibamoto et al. modified by Iwasaki et al. discloses the electrode with insulating tape as is discussed above and incorporated herein but fails to disclose the insulating tap on both sides of the electrode plate. Kimijima et al. discloses a secondary battery with an electrically insulating adhering tape located on both sides of the electrode in order to prevent the electrodes from touching each other (Paragraph 47, Figure 1, 8a, 8c) and thus preventing a short circuit from occurring.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the insulating tape of Kimijima et al. on both sides of the electrode of Shibamoto et al modified by Iwasaki et al. because this would prevent the electrodes from touching each other and prevent a short circuit from occurring.

### ***Response to Arguments***

7. Applicant's arguments filed 21 April 2008 have been fully considered but they are not persuasive. Applicant argues that the Iwasaki applies the insulating tape to outer curvature of the current collector and not to the folded portion of the electrode. Iwasaki discloses the addition of the insulating tape to prevent a short circuit from occurring and it would have been obvious to apply the tape to the folded portion to further prevent the electrodes from touching each other in case the separator is torn or deformed.



***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA J. LAIOS whose telephone number is (571)272-9808. The examiner can normally be reached on Monday - Thursday 10 am -7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJL

/Susy Tsang-Foster/

Supervisory Patent Examiner, Art Unit 1795